Volume 236 March 1992

CONTENTS

Mixing by chaotic advection in a class of spatially periodic flows. Susan C. Ryrie *page* 1

The thermal bar. S. S. Zilitinkevich, K. D. Kreiman and A. Yu. Terzhevik 27

Complete adiabatic evaporation of highly superheated liquid jets. Th. Kurschat, H. Chaves and G. E. A. Meier 43

Coupled convective and morphological instability in a simple model of the solidification of a binary alloy, including a shear flow. S. A. Forth and A. A. Wheeler 61

The concentration distribution near a continuous point source in steady homogeneous shear. James D. Bowen and Keith D. Stolzenbach 95

Interfacial instabilities in aluminium reduction cells. A. D. Sneyd 111

The dynamics of intrusions into a thermohaline stratification. S. Geoffrey Schladow, Ellen Thomas and Jeffrey R. Koseff 127

Non-isothermal flow of a liquid film on a horizontal cylinder. B. Reisfeld and S. G. Bankoff 167

An analytic model of the generation of surface gravity waves by turbulent air flow. Cornelius A. van Duin and Peter A. E. M. Janssen 197

Structure of a particle-laden round jet. Ellen K. Longmire and John K. Eaton 217

Over-reflection and shear instability in a shallow-water model. Shin-ichi Takehiro and Yoshi-Yuki Hayashi 259

Kinematic simulation of homogeneous turbulence by unsteady random Fourier modes. J. C. H. Fung, J. C. R. Hunt, N. A. Malik and R. J. Perkins 281

Experiments on mixing in continuous chaotic flows. H. A. Kusch and J. M. Ottino 319

Two-dimensional patterns in Rayleigh–Taylor instability of a thin layer. M. Fermigier, L. Limat, J. E. Wesfreid, P. Boudinet and C. Quilliet 349

Subharmonic growth by parametric resonance. M. R. Hajj, R. W. Miksad and E. J. Powers 385

The kinematics of stretching and alignment of material elements in general flow fields. Eliot Dresselhaus and M. Tabor 415

A numerical study of vortex shedding from flat plates with square leading and trailing edges. Yuji Ohya, Yasuharu Nakamura, Shigehira Ozono, Hideki Tsuruta and Ryuzo Nakayama 445

The oblique ascent of a viscous vortex pair toward a free surface. Hans J. Lugt and Samuel Ohring 461

Report of a Symposium on Mechanics of Fluidized Beds. G. M. Homsy, R. Jackson and J. R. Grace 447

Prediction of film inversion in two-phase flow in coiled tubes. G. F. Hewitt and S. Jayanti 497

Hydrodynamic diffusion of a sphere sedimenting through a dilute suspension of neutrally buoyant spheres. Robert H. Davis and N. A. Hill 513

Spiralling columnar convection in rapidly rotating spherical fluid shells. K. Zhang 535

Cellular Stokes flow induced by rotation of a cylinder in a closed channel. Mustapha Hellou and Madeleine Coutanceau 557

Low-Reynolds-number effects in a fully developed turbulent channel flow. R. A. Antonia, M. Teitel, K. Kim and L. W. B. Browne 579

Numerical investigation of the high-speed conical flow past a sharp fin. Argyris G. Panaras 607

Nonlinear spatial equilibration of an externally excited instability wave in a free shear layer. Lennart S. Hultgren 635

Two-dimensional vortex-dipole interactions in a stratified fluid. S. I. Voropayev and Ya. D. Afanasyev 665

Reviews

The Atmosphere – a Challenge, edited by R. S. Lindzen, E. N. Lorenz and G. W. Platzman 690

Writing Successfully in Science, by Maeve O'Connor 692

Index to Volume 236 694

Schedule of International Conferences on Fluid Mechanics 696